DETAILED ACTION

Response to Amendment

In response to the amendment received on October 8, 2009:

- claims 9, 10 and 12-17 are currently pending
- all prior art rejections are withdrawn in light of the amended claims
- new grounds of rejection are presented below

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al., (U.S. Pat. No. 6,355,152) (hereinafter referred to as "KATO").

Regarding claim 9, KATO teaches a sensor element for determining a property of a measuring gas comprising:

- a solid electrolyte (see solid electrolyte layer 14 and col. 7 lines 58-63);
- a diffusion barrier (see first diffusion rate-determining section 26);
- at least one electrode applied on the solid electrolyte and being in contact with the measuring gas via a diffusion path in which the diffusion barrier is situated

(see electrode in second chamber 20 which is in contact with the measuring gas via a diffusion path through first diffusion rate-determining section 26); and

- an arrangement provided in a region of a side of the diffusion barrier facing away from the at least one electrode for reducing a diffusion cross section in the region of the side of the diffusion barrier facing away from the at least one electrode (see slit 140 which is in a region of a side of first diffusion rate-determining section 26 facing away from the electrode in second chamber 20 and which reduces the diffusion cross section in that region);
- wherein the arrangement is in physical contact with the diffusion barrier (see slit 140 is physical contact with first diffusion rate-determining section 26); and
- wherein the arrangement is gas impermeable (see figure 25b and col. 17 line 54-col. 18 line 4 teaching slit 140 acting to force the measurement gas through first diffusion rate-determining section 26 and thus necessarily being gas-impermeable). See figures 26 and 25b below.

FIG. 26

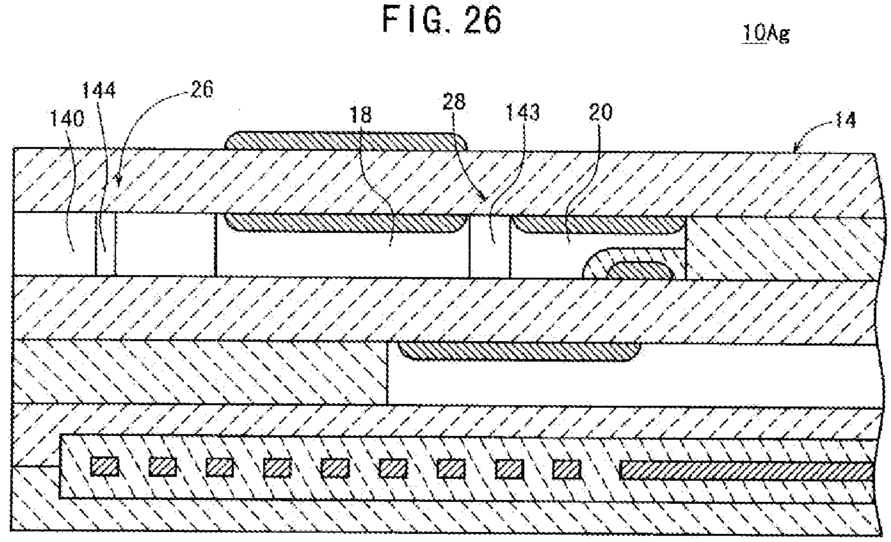
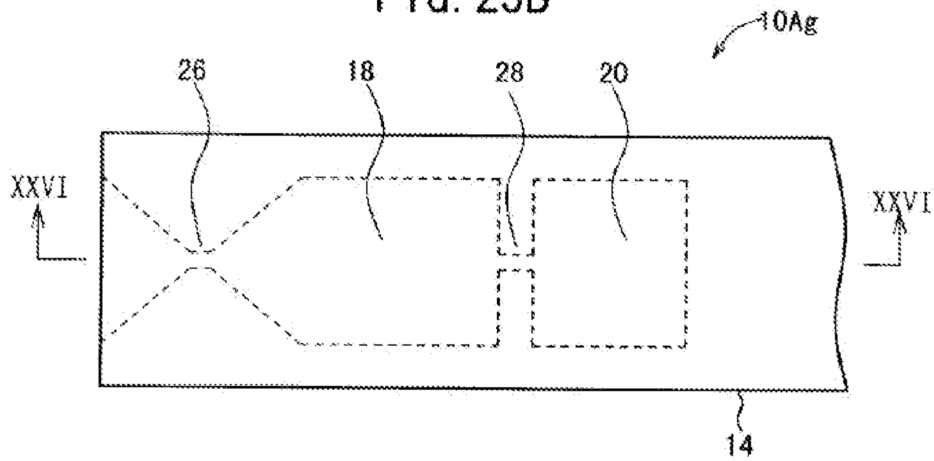


FIG. 25B



Regarding claim 10, KATO teaches a sensor element for determining a property of a measuring gas wherein the sensor element determines a concentration of a gas component in the measuring gas (see col. 7 lines 51-57).

2. Claims 9, 10 and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Dietz et al., (D.E. Pat. No. 3728289 C1) with reference to the provided machine translation (hereinafter referred to as “DIETZ”).

Regarding claim 9, DIETZ teaches a sensor element for determining a property of a measuring gas comprising:

- a solid electrolyte (see solid electrolyte layer 1’);
- a diffusion barrier (see figure 8 teaching the diffusion channel 9’ around gas supply hole 10 having diffusion channels 8 and 9; see also diffusion barrier 6 as

shown in figure 2 teaching the generally location and orientation of the diffusion barrier embodiment of figure 8 in relation to the rest of the sensor);

- at least one electrode applied on the solid electrolyte and being in contact with the measuring gas via a diffusion path in which the diffusion barrier is situated (see electrode 2); and
- an arrangement provided in a region of a side of the diffusion barrier facing away from the at least one electrode for reducing a diffusion cross section in the region of the side of the diffusion barrier facing away from the at least one electrode (see diffusion channels 8 and 9 in a region of the diffusion barrier facing away from electrode 3 and which acts to reduce the diffusion cross section in that region);
- wherein the arrangement is in physical contact with the diffusion barrier (see diffusion channels 8 and 9 in physical contact with the diffusion barrier 9'); and
- wherein the arrangement has a smaller pore proportion than the diffusion barrier (see 4th paragraph in the "Description of the Embodiments" section teaching diffusion channel 8 being filled with a porous material and diffusion channels 9 and 9' being unfilled diffusion channels thus requiring the filled diffusion channel to have a smaller pore proportion than the unfilled diffusion channels 9 and 9' of the diffusion barrier). See figures 2 and 8.

Please note, in making the rejection the Examiner is relying on the basic structure of the gas sensor as shown in figure 2 in combination with the gas diffusion barrier embodiment of the invention as shown in figure 8 below.

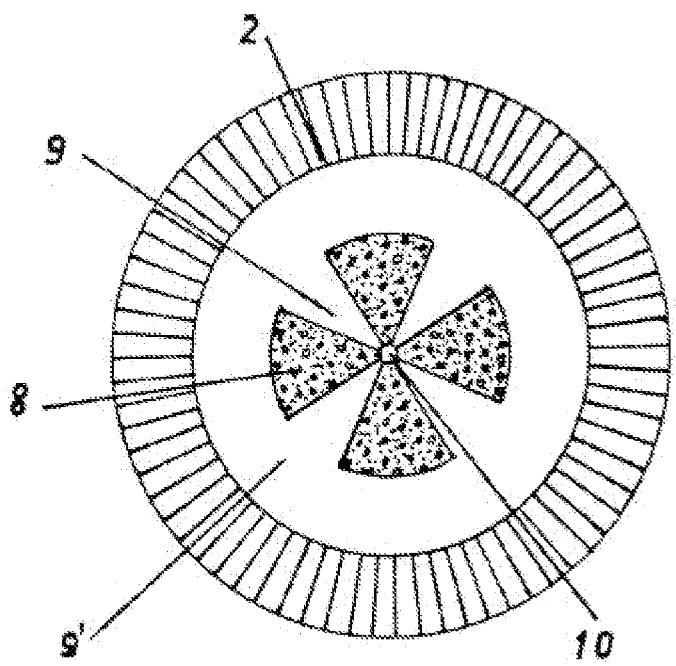


FIG. 8

Regarding claim 10, DIETZ teaches the sensor element for determining a property of a measuring gas wherein the sensor element determines a concentration of a gas component in the measuring gas (see abstract and 1st paragraph in the "State of the Art" section).

Regarding claim 12, DIETZ teaches the sensor element for determining a property of a measuring gas wherein the diffusion barrier has a substantially cylindrical shape (see diffusion channels 9', 9 and 8 above comprising a substantially cylindrical shape around gas supply hole 10). See figure 8 above.

Regarding claim 13, DIETZ teaches the sensor element for determining a property of a measuring gas wherein the at least one electrode includes an annular shape and surrounds the diffusion barrier so that an exhaust gas is able to travel through a gas entry opening into an interior region of the diffusion barrier and from there via the diffusion barrier to reach the at least one electrode (see electrode 2 being in an annular shape that surrounds the diffusion channels 8, 9 and 9' as claimed). See figure 8 above.

Regarding claim 14, DIETZ teaches the sensor element for determining a property of a measuring gas wherein the arrangement includes an annular element provided in a region of the gas entry opening (see diffusion channels 8 and 9 comprising an annular element surrounding gas supply hole 10). See figure 8 above.

Regarding claim 15, DIETZ teaches the sensor element for determining a property of a measuring gas wherein the arrangement includes at least one arrow-like element provided in a region of the gas entry opening (see diffusion channel 8 portions which consist of an arrow-like sections extending in a region of gas supply hole 10). See figure 8 above.

Regarding claim 16, DIETZ teaches the sensor element for determining a property of a measuring gas wherein a height of the at least one arrow-like element corresponds to a height of the diffusion barrier (see figure 8 showing diffusion channels

8 and 9 in a region surrounding gas supply hole 10 which would have the same height of the diffusion channel 9'). See figure 8 above.

Regarding claim 17, DIETZ teaches the sensor element for determining a property of a measuring gas wherein A_1/r_1 is greater than A_2/r_2 as claimed (see diffusion channels 8 and 9 which have an annular shape and diffusion channel 9' which is also annular shaped surrounding diffusion channels 8 and 9, which because r_1 is greater than r_2 with a constant height would meet the claimed relationship). See figure 8 above.

Please note, using the formula for the diffusion cross sectional area $\pi r^2 h$ with the relationship r_1 greater than r_2 the claimed relationship can be found to be met by DIETZ.

Response to Arguments

Applicant's arguments with respect to claims 9, 10 and 12-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN D. RIPA whose telephone number is 571-270-7875. The examiner can normally be reached on Monday to Friday, 9:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/
Primary Examiner, Art Unit 1795

/B. D. R./
Examiner, Art Unit 1795